Notebook Series -- Notebooks by Edison and Other Experimenters
Disc Record Book No. 3
Notebook, N-16-01-20

This notebook is a continuation of N-15-12-29. It was used by Edison in January 1916 for notes on experiments to improve the composition of disc record blanks and the varnish surfaces applied during the transfer process. One entry at the beginning of the book, entitled "old book notes," contains information from earlier notebooks. Subsequent entries describe a sequence of experiments numbered from 58E to 139E in which the ingredients for record blanks and record varnishes are varied. Many entries include a summary of results, usually giving a tally of acceptable and unacceptable record surfaces obtained. Some of Edison's notes are in the form of instructions to Archie D. Hoffman, Sherwood T. (Sam) Moore, or other employees. The front cover is labeled "1916 #3 58E Disc Expmts." The pages are unnumbered. Approximately 160 pages have been used.

Anhydrous Alcohol or even high proof alcohol Cant be used for Varnish plates as the 6/4 will not dissolve in it —

Boiling Absolute Alcohol dissolves Considerable 6/4
But Boiling Acetone, Benzol, Amyl alcohol dissolves scarcely any

Hot Carbolic dissolves some 6/4

Old note book says Camphor, Oil Sassafras oil, Gasolin, Carbon Tetra seperate out of Varnish —
But Benzol works ok

1-20-16

Dunwiddies Experiments on Expansion & Contraction of Raw Condensite Varnish from Veneers.

	Contracts	Per degree
192° Fahr	.0345	001
175	.0329	
150	.0320	00036
127	.0309	00047
100	.0299	00037
78	.0295	00017

Varnish takes permanent set as low as 125° @ 130, with only 10 grams load to ½ inch strip 2½ inches long
But Time must be allowed

On cooling the streatch is greater than the Contraction from 135° to 121° after this it Contracts .0006 in 2½ inches when its 100° after 13 minutes more
The tensile strength at 100° Fahr is enormous
Above 200° its a rotten jelly

New alcohol only used in plate Varnish = Recovered used in powder

Old book notes –
Dehydrated Condensite Resin dehydrated higher than Reg when diluted with 50% more alcohol is very light red & it filters very very slow totally – unlike Reg – Then wood alcohol is used it filters ok & fast

We'll have to filter hot, vac filter, or filter press hot or find something volatile tho as cost Ethyl to dissolve but not to be dangerous to our people –

2½ inch desco – in lab 50 lbs pressure in lbs on gauge is same as disc pressure per sq in
100 Chalk 33 cc powder Varnish mixed well & dried –
. Rather hard cuts little hard fine surface dont think it will stand dropping
. Not enough Shellac yet,

I diluted regular Varnish with Alcohol 1 Var 2 Extra Alcohol poured in 3 butter dishes, dried fine but even when heated very slow on hot plate the bubbles were terrible, This proves I think that our bubbles which come in baking are due to low proof alcohol
Not certain of this ?
We must treat our recovered alcohol some way

1-20-16 acct

58E

2 Wood 5 Chalk

2 1/4 Lac

Make blank with Regular Schedule informal pieces

Blank dont give any
where get pressure on transfer
blank get good weld —
yet to practically like the
others that do give equal
high % for instance 48

59E — B
1/8 scraper off wt 757 —
51 — 38 ok 13 dis pull outs mostly

Rent

59E

2 wood 5 chalk
2 1/2 lac —

Make blanks with irregular
schedule in final press

Moulded small pieces 100 lb pressure no strike off
128 blanks 95 Discards 33 ok discards
all pull outs
Too much shellac or too much heat

Trans 12 all discards.
2 ckd Van 5 Cooked Lac
5 Left ckd

Reg Van — Thin
Scrape off 1/8 blank
3/8 ~~thick~~ Very thick

B

RO		
1		fine
2	II	quad
3		
4	IIII	
5	I	fair
6	II	
none	III	Pmfl

Weighs quite a lot
Crumbly but easy to
move them

This powder was ground
+ dried again –
tests show that powder
Even when Cured
only has 0.6 % moisture
Standing all night
Expected to run goes to
1.84 % moisture

60 E

sent

2 Wood 5 Chalk
$2\frac{1}{4}$ Lac –
But press in 3 lots
on final press where
blanks are made
500 700 + 800 lbs
instead of the 1000 you
now use

B Transf'd 12-12 OK Print 6 6 OK

A no test

A 500 –

RO	fine II
1	
2	good IIII
3	
4	fair
5 II	
6 IIII I	Crackly like ash, Ruff IIII I
none IIII	

A = welds good – Edges fair to good

B 700

RO	fine IIII
1	
2	good II
3 I	
4 I	fair
5	Bulged out in middle too much lac
6	
None IIII	Ruff

61B – Wt 448 – mix like paste, leaves moulds cloudy & gritty

C 8 | Vertical

RO	fine IIII
1	
2 I	good II
3	
4 I	fair
5	Edges burnt out
6 I	
none IIII 6	Ruff –

61E Mistake was made by man Relt

2 Wood 5 Chack

2 1/2 Lac Not tested

But press in final press

Blank press at 3 def pressure 500 700 + 800 lbs instead of the req 1000 lbs –

Moulded A 35 at 500 lbs
" B 35 700 "
" C 36 800 "
} on small press by mistake

all 1000 on large press should have been done in final press

A = 500 – Transf Req Var dropped
B = 700 – Trans "
C = 800 – Req Var Ed

12 T 7 OK 5 Lift Cracks 2 thin margin, 2 chd
Prints 6 – OK –

12 T 3 OK 2 Left Cracks 1 Thin margin
Prints 3 T 3 OK 3 print margin

12 Trans 3 OK 6 Left 1 Cracks – 2 pullout 1 bad
Prints 3 – 2 OK 1 ppr

A – 12 12 OK 6 Prints all OK

RO	Edges fair tends to flow out by flow in 1 OK Commutator edges OK Welds good	Fine
1		
2		good
3		
4		fair
5		
6		Ruff
Non		

B Trans 12 40 OK 6 ck left 2 blanks
Prints 3 – 1 OK 2 pp.

RO	Edges flow out Welds good	Fine
1		
2		good
3		
4		fair
5		
6		Ruff
Non		

Blank surface poor chalk pulls and leaves fibre evidently oily blank blanks burned

C 12 T 12 OK 6 Print 6 OK

Red's Heat other 1/2

RO	Edges Crumbled Welds good Transfer blank	Fine
1		
2		good
3		
4		fair
5		
6		Ruff
Non		

Note Big run out on C 1/2 Blank shows red other 1/2 Blank, Hundreds of little dents show on red none on blank, gas out of Varnish probably in molding these dots, as it is clearly not welded HERE IS a CUE

62 E

Recut

2. Wood 5 Chalk

2 Lac 1/4 Condensate in form of dipping Varnish —

1/3 500 lbs 1/3 700 lbs
1/3 Reg schedule
1000 lbs —

Moulded 100 lbs press on small press no strike off
500 lbs on large press 36 blanks 100%
700 " " 91.6%
1000 " " 94.4%
Moulded by Mistake on small instead left the large press

63E

Rent

2 Wood 5 Chalk

2 3/4 Shellac

1/5 Condensate in form of Dipping Varnish

No-Test

'63 E-C

No prints or transfers —
All plates lifted in the oven
+ all cracked

Oil separates out in
Condensite, gives mottled
appearance

True Segregation NG

We shall have to be
careful about purity
of our varnish

Brittle.

Van Vis 2.31 Spokes graduate from
rim - plates OK —
Room 85 Van 65 —

Oven 35 all discarded
28 lift up from plates
7 Reused

64E

Varnish
1/2 gallon
Use 5% of Oil Cedar
wood, of the Resin
plates to be used on
1293 blank
12 Transfers
6 prints.

New

All lifted free from plates
& most cracked

Brillo, Oil segregated

NG

Var - spokes radiate from rim
shows only streaks no patch
plates - flowed on new buffed plates OK
Room 87 Var 70

Oven 34 — all dis
8 lift up from plates
26 Raised

65 E

Scrit

1/2 Gallon Varnish

Dup of 64 E but use
10% Cedar Wood Oil

Use 1293 blank
12 Transfers
6 prints

Phase
Horrible Bubbles –
+ large – all over –
No Test

Var spokes radiate from rim
Shows fine mottle, when drying
out very fine bubbles show up ~~don't~~
look good Room 85 Var 70°

Oven 34 – all discards
34 – Bubbles –

66E

Rent

1/2 gallon Varnish
Use 5% of Phenylhyrdazin

Use 1293 Glauk

Make 12 Transfers
6 Prints

All horrible bubbles N9

~~No test~~ —

Var Spokes radiate from rim, fine bubbles appear when drying out
Room 85° Var 70 N.9. —

Oven 38 — All discarded for bubbles

67 F

Acut

½ Gal Varnish.

Use 10% phenylhydrazin

Use 1293 Blank

Transfer 12
Print 6

RO — Fine 5

1

2 — good

3

4 — fair

5

6

None — Ruf

68E
Var Spotes radiate from rim – Mottle
has good body plates
good, shows only streak
Rom 85 Var 65

Shows Iso Eugenol no heart
or gain –
good well
Edges fair –

Oven – 35 250 OK
Raised 5
Cracked 5

68E=B Iso Eugenol – Var works good
plates good Var OK –
Rom 90 Var 75
Welds good

RO — fine

1

2 — good

3

4 — fair

5

6

Rom — Ruf

68E

Sent

½ Gallon Var
Use 5% Eugenol

Use 1293 Blank Reg

Transfer 12
Print 6

12 Trans 12 OK
6 Prints – OK
34 plates flowed
Baked 34 Baked 33 OK 1 No Cracked
all look warmy Even plates

68E=B Iso Eugenol 1293 Blank
10 Transfer 10 OK –
6 Prints OK – 2 per print
warmy Var works good plates
perfect OK in every respect
Bake 35 5 Raised 5 Cracked 25 OK

Note Cracked & bad RO

RO 1 fine 5
1
2 || good
3 |
4 |||
5 |||
6 |
now 5 Ref 1

Oven 37 - 350 OK
Bubbles 2
Very Even

B poorpoint
RO poorpoint worms fine
1 - 1 |||
2 1
3 1 wrinkles good ||
4 1
5 || fair |||
6 ||
now || Ref

Welds good
Edge fair

69 E. Var Mottled, spakes, only cracks dont look good - plates good Room 85° Var 70

69 B Var works good - plates Even - dont Creep or Crack Room 90 Var 73
oven - all worm Even - 37 1 bubble 9 Ranged 27 OK -

Most of all bad is due to wrinkles, poop or Crack in 1 of them -

69 E

Dent

1 Gallon Varnish
Use 10% Eugenol -

Use 1293 Blanks

Transfer 12
Print 7

1 12 Transfer 12 OK
6 Print 6 OK

Worms

Oven - 37 Baked 35 OK 2 bubbles
Wormy all Very Even

69 - B 200 Eugenol -

10 Trans - 8 OK 2 1 pull out
7 print 4 OK 3 poop 1 meshmerd

RO
1-III
2 IIII
3
4 II
5 (II) 2
6
None

Fine IIII (III) 8

Good III

Fair

Ruf-

Nothing in Balsam

Var thin streaks thru center plates poor
Temp. room 90° Var 66'

Oven 31 – 24 good
Bubbles 1
Raised 6

70E

Sent

1/2 Gallon Var
Use 5% Balsam Canada

Use 1293 blank
Transfer 12
Print 6

Transfers – 8 – 8 ok

6 prints 5 ok 1 p print on recirculation

Trans 4 Reg V ok
Print 3 – 1 ok 2 poor p

RO [redacted]	fine
1	
2	good
3 11	
4	fair
5 1	
6 1	
Note	Ruff. [redacted]

The finest sample of RO-+ load

surfaces by Mottled The Condensite Cooks down into the surface Cavities of the blank

Most tremendous Mottled surfaces show, ~~[redacted]~~ Emery paper takes place off that Each mottle is a round depression

Horrible surface
4 " ROuls

71 E

5 Chalk 2 Asbestos
from Johns I have it here
not the Condensite Asbestos which
aint asbestos -
2 Lac

Screen out the dark sand from the Asbestos with a 40 mesh screen it will then turn white
Only want 20 or 30 blanks of each kind

Moulded small press 20 lbs pressure No strike off
7 Blanks 4 pull outs 3 broken

72 E

5 Chalk 1 asbestos
2 Lac

Moulded 20lbs pressure no strike off –
Made 6 = discards = 2 broken – 66.6%

No test,
Worse moulded,
Very strange this
Investigate,
It may be asbestos balled up
& didn't mix well –

73 F

5 Chalk 2 Asbestos
1 1/2 Lac

20 lbs pressure small piece No strike off –
Made 6 — 1 Broke 83.3%

No test horrible
Waste —
fine Example

74

RO 1	fair	
2	good	
3		Has less
4	fair	Wattle —
5		
6	Ref -	
now		

94F

5 Chalk 1 Cadeolos
1 Lac —

20 lbs pressure small press No click off
Made 5 all OK 100%

Very Strange

RO	
1	
2 |||	good |||| ||
3			
4		fair
5					
6					
None	Ruff

Make wear test,

Var OK ~~Works good, Looks good~~
<u>Oven</u> = Look wonky | all even
35 plates 1 large 4 small bubbles

Wear test, 100 times OK
250 Cuts some - dont
seem to hurt magic at
all - Land board

another
Specimen
3/29/91
no wear

~~another specimen~~
~~about same wear~~
~~little less~~

75E Varnish

Dip of 12 E except
5½ 6/4 added 6E surr.
Naphthalen put in

print 12 Transfers on
1293 Blanks

Make 12 Transfers
6 prints

Transfd 1293 Blanks

Trans 12 11 OK 1 ckd -
Print 6 - 4 OK 2 poor print on margin

RO 1 [illegible] for 2"

1 –	Fuzz ~~IIII~~ IIIII
2	good III
3 I	
4 II	fair
5 I	
6 ~~IIII~~ 8	
None II	Ruf

Run wear test.

Edges fair

Wear test. 250 ok very little

Wear shows = ~~[illegible]~~

~~[illegible]~~

another speaker

no wear #32191 -

A 17962 Speaker

not so good

[illegible]

76 E

Dup of 12E

Except use $5\frac{1}{4}$ 6/4

Keep Naphthalene the same

Use 1293 blanks

Transfer 12

Plates full holes - Print 6

Streaks Creeps 88° Fahr Var 67°

Oven all wormy — Very even

33 – 30 ok | 3 bubbles —

12 Transfers 1293 blank 12 ok

Print 6 – 4 ok 2 poor p on Margin

As low as $5\frac{1}{4}$ 6/4

In 16% tricresol cresol

is ok for WEAR

R.O.1 — several Cracks

1 — Fine ~~||||~~ ~~||||~~ 10

2 — good ||

3 ||

4 | — fair

5 |

6 |||| 6

none ||| — Fluff

Run

Wear test,

77 E

Drop of 12 E

Except use 5 6/4

Same Naphthalene

Use 1293 Blank

Transfer 12

Print 6

Var creeps Streaks Wavy Temp V 70° Room 88°

Oven look wormy — Very Even

35 Bubbles 3 | 320 OK

Transfer 1293 blanket req sch

12

1 OK

7 pull outs 4 Birds, 1 Ckd Var

Note Birds + pull outs comes with low 6/4

RO Fine (II) 2
1
2 good ||||| |||
3 1
4
5 Fine
6 |||| 9
Nave ||||| Ruf

10/90

78

Dup 12
But leave out the
Naphthalene & use
6 6/4 —

Works good - plates even & OK Room Temp 88°
Var 74° —
Note improvement on flowing when
Naphthalene left out —

Naphthalene like Camphor
gives great movement on water
Changing surface tension —
Nap bad

Oven 33 plates 23 bubbles - 10 OK
Note leaving out Naphthalene Cause bubbles
Then 5 Transfers 5 OK
5 Print 5 OK
Will transfer & print the bubble plates —

50 gr Talc - 1 flock 50cc Var - mix very well
dried all night ground + redried
Clinch to mould 25 grm
4 drops 8 ft high - good
Surface fair - some little pitted,

Kaolghm 50 - 1 flock 50cc mix very
dry + dried all nigh, ground 12 grams wt
Clinch to mould 2nd time -
Broke 1st time - fair surface

50 grms China Clay 1 flock 50cc Varnish Duo
Dried all night ground + redried
wt 25 grm Mix very wet
Very fine surface but lumps of flock poorly
ground + mixed - broke 2nd

50 grm Slaked lime very Even
nice surface best looking of all
50cc Var Duo 1 grm flock
Mix very wet dried all night
ground + redried wt 25 grm
Broke 1st drop - needs more
flock to clamp it -

Continued to near
End of Book

1-21-16

Fred Ollo Expts

50 Chalk 10 Asbestos
50 cc Reg powder Varnish -
Weighs 25 grain - thickness OK
Dropped 4 ft on board
floor Cracked pieces held it
together.

50 Chalk
10 asbestos
40 cc powder lack
5 ft drop Cracked

50 Chalk
20 Asbestos
60 cc 25 grams
Reg thickness
Thrown up twice 5 ft OK
3rd time 7 ft Cracked

Fred Otto Experiments

50 Chalk ½ Collonflock 60 cc powder
Varnish —
Dropped 7 ft 5 times
still OK

50 Chalk 1 Collonflock
60 cc Varnish
Broke 1st drop —

96 E

Moore brat 11 RO records
requested from inspection dept
He is going to drop & reprint

		After dipping
1 —	RO-1	RO1
2	Big —	Big
3	RO2	2
4	none	6 —
5	RO4	4
6	none	none
7	RO1	2
8	RO3	4
9	RO2	3
10	Big	Big
11	RO3	2
12	RO2	5
13	RO4	4
14	none	6
15	RO5	4
16	RO2	3
17	RO5	3
18	RO6	4
19	Big	Big
20	Big	1
21	RO1	1
22	RO1	2

Dipping doesn't damage or
Change the RO —

79E Too much Lac

2 wood 5 Chalk 2 3/4 Lac

Packs nice lot 443 mixed like paste
gauge 22 leaves moulds fractured

110 blanks 68 dies pull outs, 38 1/0

N9

Notes

All discards in
Transformer
too much Lac

RO
1 Fair
2 good
3 Fair
4 1 Ruf
5 Edge had Crumbly
6 1 some scum flow 1
Aggregate cut perfectly
in Trimmer

80F

2 Wood 5 Chalk 2 Lac &
1/4 of Dyeped black Varnish
mixed with Lac Var

No adapter ring in big press
Wt 443 average 220
117 blanks 2 dis pullouts 98.2%

Mix like paste

Trans 12 1 ok 2 left crkd 1 thin necks
3 ckd Var 5 mechanical defects
Shrink plates, due to Crumbli –
Prints 1 ok

RO
1 fine 12
2 good
3 |
4 |
5 ||
6 ||| 10 fair
now | Ruf

Welds good
Edges crumbled feather bad —

81E

2 Wood 5 Chalk 1 1/4
old Condensite Varnish
wz once used in 4 to 1
Condensite Plank

No adapted | large pores
Wt 439 gauge 235 | leaves moved fair
99 blanks 2 pressouts Gal OK
Mix like Crumbs

Lac blank has 12.0% Lac this has 15.1%
Condensite Resin —

Transfers - Reg Var dep 12 110K 1 stuck
to plastic | Prints 6 | 2 OK 4 poor
prints —

The other 6 prints

RO	
1 ~~IIII~~	
2 II	good III
3	
4 II	fair II
5 I	
6 I	Ruf II
none	

RO	
1	fair III
2 I	good IIII
3 IIII	
4 II	fair III
5 III	
6 II	Ruf II
N	

6 6/4 was fine this mg
It certainly is the Blanket
or mistake by putting on Reg Var
instead of 82E Var

All the prints are made by one
man this is true of Transfers
Different man at night

Washed with 21% Rot dilute

Strange Exception

82E Varnish

Resin only no phenol added
use regular ingredients
with $5\frac{3}{4}$ 6/4 —
Use 1293 blank
Find if he used Nap by
Mistake its OK — Didn't use Nap

Var — good, shows only scum on top —
Oven 34 300K bubbles 4 —
plates look wormy — Very Even —
Transfers 12 11 OK 1 pull out,
Prints 6 OK

Reprint

RO	
1 —	fair IIII
2 I	good IIII
3 I	
4 I	fair II
5 IIIII	
6 II	Ruf I
N	

Something wrong here

Amplifying 6 more —
These are just as bad

RO — Fine ~~IIII~~ ~~IIII~~ 10
1—1
2 — good II
3
4 — fair
5 IIII
6 III
Now IIII II — Ruf

2nd test 3 days after

RO — Fine ~~IIII~~ II
1
2 — good I
3
4 II — fair
5 II
6 IIII
Now — Ruf

83. E

Phenol Resin no free phenol added, use regular ingredients and $5\frac{1}{2}$ 6/4 1293 Blank

Varn not very good, creeps, oily scum on top of varnish sheeks
OVEN all look wormy Very Even
35 — 2 bubbles
Transfers 12 11 OK 1 unchanged defect
6 prints 6 OK

Get over report

RO.1 Fine ~~IIII 4~~ 10 91%
1
2 1 good
3
4 1 fair 1.
5 III
6 II
none IIII Ref 1
82% RO

84E

Phenol resin, no free phenol added - use regular ingredients at

$5\frac{1}{4}$ 6/4

1293 black

Var - good, very even plate, only scum on top of varnish

Oven looks corny Very Even - 35-4 bubbles

Transfers 12 12 OK

Prints 6 5 OK 1 poor print

RO 1-1 — fine IIII IIII I

2 I — good I

3 III

4 I — fair II

5

6 IIII — Ruf

none II 4

This is the Limit on 6/4 with plain 16% free phenol resin - beads + pull outs show up in this 5½ about right

Run over again 3 days later

RO I — fine IIII III

1-III — good III

2

3 I

4 I — fair I

5

6 IIII

none II — Ruf

85E

phenol resin no free phenol added use deg ingredients

With 5 6/4

1293 blank

Var good fair body, oily scum -

Oven plates warmy Very Even

Transfers 12 6 OK 4 pull outs

1 2 beads -

RO 1 fine ||
1
2 good ||
3 |
4 fair |||
5 ||
6 |||
None || Ruff ||

NG

86 E

5 ~~Good~~ 2 Chalk
2 Lac

100 lbs pressure little pecan no scrape off
Weight 435 dirty blanks rough spots on
132 blanks 94.5% OK
Mixes like a paste

Transfer 12 8 OK 1 Cooked Center
1 left Ckd — 1 Ckd Var

Prent 1 OK 5 p pennies —

RO	fine IIII II	
1 II		
2 I	good II	
3 III		
4 III	fair I	
5 I		
6 I		
none I	Ruf II	Not much good

Weld's good
Edges - fair -

87E

4 wood 3 Chalk 2 Lac

Blank 100 lbs little press packs nice
no scrape off 405 103 blanks all OK
Mixes like a paste -

Transfer 12 12 OK
Print 1 OK 5 p pressures -

88E

4 wood 3 chalk 2 $\frac{1}{2}$ Lane

No Test

Varnish to plates

89 E

Dehydrated resin —
11% —
2 6/4

1293 Blanks —

Tell Moore to use 50cc
if not enough use 55cc
as var will not have so much
Condensite Muck in it.

Transfers all stick to Varnish
plates Cant get apart the reason
is that Hoffman thought it would
come down to 5% instead the
11% & 6/4 is entirely too small
to Condense the Varnish

Oven Worm-Crystalized looks bad for bubbles
around edge of plate —

Var = Matte then streaks,
spokes. Calcium Var breaks
plates poor —

90 E

Dehydrated Resin — 11%7P

2½ 6/4 -

X not test

Mg
Stuck to file

Pullout

91 E

Dehydrated Resin -11%

3 6/4. 12936 Clank

Vac – Thin sheets, + holes looks good
but plates poor

Plates Oven – 35 plates 5 bubbles 300 ok
looks wonny Crystalized –
Not Condensed in Transfer
pulls out big Chunks plates
Stuck bad –

RO	fine ||||
1	
2 ||	good ||
3	
4	
5 |||	fair
6	
none	Ruf-

This is Limit down on 6/4 in 11% Resin - nothing else

92 E

Dehydrated Resin 11%
no Extra phenol added

~~3/4~~ 6/4

Var - thin sheets & holes look muddy & oil - plates poor

Oven looks worry Cryolite
35 - 34 OK 1 bubbles -
Transfer 12 4 OK - 5 pullouts
3 birds -
Printed 3 2 OK 1 p pull

93 E

Dehydrated Resin - 11%

4 6/4

It is likely that if we run up against crushed Edges on 2 wood-5 Chalk 2 Lac that after painting we can Edge off 1/8" Extra + get to solid blank + by lacquering Edge with thick lac stop peeling — + absorbing water

Also not hard in transfer or print so long at high temp so as to over Condense outside surface of Enear to make it Curl away from blank

22 free phenol — 16 in Resin
6 added +
8.6/4 is 2.74 free P per 1 6/4

16 Resin + 6 6/4 is 2.66 per 1 6/4

from the action of wood oil in Varnish the phenomenon on wear test of a part cutting + other part not, that it is due to oil or ingredients that gets in Varnish -

It is likely Cracking is due to greater Contraction of the non or semi condensed ingredients in the Varnish — Dehydrated Resin Experiments will prove that.

RO Fun1
1
2
3 1 (rounded plate) quad 1
4 face Space
5
6 1
non Ruf

This is very thick 3/8
Scrape off plate & extremely
hard —

94 E
Thru 180 mesh
Reg powder 89% powder Very fine powder
Duplicate of 48 E
But the dipped blanks
not baked,
Reg Var
+ Note all o/o s — Edge 1/8 more
than usual — This should
give fine results,
Blank 1/8 Scrape off Lot 743
54 — 52 OK 1 pull out
1 mechanical
Blanks 12 1 ok 7 left ck 4 Var ck
Prints 1 —

Varnish has

62.2 % Alcohol
37.8 Resin & other Things —
35.53 When Free phenol in resin deducted
If para & Sandarac deducted
35 % The phenol added

With all the stuff we add it is
40 % non condensing stuff
independent of the 6/4 or
49 % residue in Varn of which
only 35 is resin
No wonder Resin cracks

90 grams Varn
55.6 anhydrous alcohol
2.9 Water
27.3 absolutely dehydrated Resin
2.8 6/4
7.7 Free phenol
0.4 Sandar + Para - Negrosine
96.7 not right should check
up to 90 see Hoffman

RO	
1	fair
2	good
3	
4	fair
5	
6	R1
n 1	

When get good blank use some of these plates —

95E

Duplicate of E 78.

Make up 150 plates.

This is 6 6/4 Naphthalene

left out use 1293 blank

Flow — Varnish Worked goes down creep - plates COEW looks good no breaks, streaks, or holes OK

OOEW Wonny have some bubbles then Varnish not bad enough to hurt the plate

143 plates 137 OK 2 Ruined 4 bubbles

Transfd 125 10 OK 1 bad 1 pin hole

Prints 40 OK 2 poor print

Concl size blank

RO	fum 1	Some cracked
1		
2	good 1	
3		
4		
5	four	
6		
Nom 1	Ruf	Mottled just the same

97-E

6 Blanks 48E

Flow 45cc req var on top of plates
Let them dry on racks 3 hours
put in Cages & Bake regular
Then print one of them direct
+ use a four tracked blank
+ test Keep the other 5
Printed 2

1 print	RO 6 none	Surface fine ↓ fine.

98E Reg powder ground very fine
thru 180 mesh 89%

48E Blanks to 6E

made in the most polished
+ best Blank Moulds

use Regular Transfers Varnish

Dup 48

Transfer 12
Print 6

Blank 1/8 scrape off lot 728 $\frac{11}{32}$
leave moulds OK 26 260K
luxes like paste!

Transfer 12 10K 4 Cooked Carbon
7 Lifts Cracked
3/8 thick blank. scrape off.
Print 1 OK

Dontflow

1 Prent	RO none 6	Surf v v fine Cant hard V. fine

99 E Req Extra fine ground 89 4/5
~~Iterm~~ 180 mesh

48 E Blanks to be made with the roughest poor surface blank moulds you can find
Use Req Transfers
Transfer 12
Prent 6

Dup of 4d
Blank 1/8 scrape off wt 735 11/32
25 made 1 pull out 1 mechanical defect

Transfer 12 - 1 ok 6 Cook Cavities
5 Lefts cracked

Prents 1
3/8 blank

Most of the trouble is in the blanks –

48 Blank is best finer surface no large holes, 1293 has holes like 1293 but far less, much better surface

48 Blank is far superior to any But the mixing is horribly bad

The lac is segregated lots of the wood has none, chalk clots strong in lac & yellow spaces filled with chalk looking white. Most of the surface where it shines is fibre just as if a chat of chalk shrank (where fibre dont shrink – The mixing is bad

Mould surfaces rough see all the turning off marks if you use fine Emery paper

Nearly every blank has part of face pulled off by mould

RO	
1	fine IIII
2	good
3	
4	fair
5	
6 IIII	
None	Ruf

100 E

50 parts Chalk —
½ part Cotton flock
60 cc. blank Varnish —

wt blank 1006 grams — 100% —
Liquid mix — ground Regular
Dipped

Transfer 12 print 6

Transfer 12 · 12 Discarded Cracked Blank
2 printed —

" Blanks OK —

101 E

50 parts Chalk
1 part Cotton flock
60 cc blank Varnish

~~Transfer~~ 12 Print 6 -

1 - 6 RO
1 No RO

1 Fine little character
1 fine V

103 E 1-24-16

Take 12 blanks 100 E

Do not dup but Transfer

with Req Varnish

10 Transfd 10 cracked Blank Var

print 6 -

" Printed 1 - Hand Ckd

brittle -

	A	B	C	D	E
RO					
1-1					
2					
3					
4					
5					
6					
Now	Slight crack edges flow 32	flow same as A, but crackers turned from A	Edge colour same as A & B	Trifle worse edges cracks, not quite as much flow	About same as other

	A	B	C	D	E
Fine					
good					
fair	Weld fair	Weld fair	Slight better weld than A & B	Weld same as other	Weld same as other fair
Reg					

57E Duplicate 48E - but only use in big final press. The following pressures - D dropped

A 300 lbs 12T Reg Var 7 OK 2 pull outs 3 cks
Prints 6 - 50K 1 pp margin

B 400 lbs Trans 12 Reg V drop blank
8 OK 2 mechanical 2 stuck to plate
Prints 6 60K - big flow on transfer

C 500 lbs
Transfer Reg V drop blank 12 8 OK 1 lift ckd on edge
2 ck Var 1 mechanical Print 6 OK

D 600 lbs
Transfer Reg V - drop blank
12T 7 OK 5 mech injury plate stuck to plate
6 P 5 OK 1 chipped edge

E 800 lbs
Transfer Reg V Dropped blank
Transferred 12, 9 OK 3 mech def plates stuck
6 prints 2 OK 4 pp at margin -

RO	
1	Fine
2	good
3	
4	fair
5	
6	
None	Ruf

104

Drop of 48 – Reg powder
Crushed & Reduced (Regrounds) 89% thru 180 mesh

Smooth plates used
Strike off also

I was rushed thru by Moore OK Except Red in Center due to Varnish running out to Edges hence no pressure in Center – The dipped part shows big sunken holes about 1/8 @ 1/4 apart

Hoffman 98% Wt 796 – powder dried twice
" 85% thru 180 – moisture 0.98
Thick 3/8 Blank

Transfd 4 | Cooked Center 4 big left
1 Thru Marque

All due to blank

RO fair

1

2 good

3

4 fair

5 ||

6 ||

7 ||

R

105 E

Reg powder Extra fine ground 89%

Micaceous - Thru 180 mesh

Shell-Lac frable to

be used Drop of

48 1/8 Rake off - Wt 782

99.9% blanks OK

104 blanks 1 pull out

Dizzped -

~~7~~/16 Unch blank

12 Transfd 4 OK 5 left Cled 2 heater already

Front 2 OK 1 pull out where is the other

Too thick

Ro	fine
1	
2	good
3	
4	fair
5	
6	
n	Ruff

106E Reg powder, ground Extra fine
89% Thru 180

Solid black Lac
Hard to be used Dup
of 48E rake off blank

Wt Blank 793 — 100%

Transfd 12 2016 2 lifts ckd
1 ckd Var 6 mechanical
plates ok mak -

RO	fine ~~IIII~~ I
1 II	
2 II	good III
3 II	
4 III	fair III
5 I	
6 II	
None	Ref

107 E

Dip 81 E

Thick blank - 98% Hoffman - scrape off -
Weight 753

Ground Rag 63% Iron 180
Moisture .74

Transfers 12 8 ok 1 13 und 1 ckd Van
6 punts 6 ok -

RO	Fine ||	
1-1		
2	good ||	
3				
4-1	four ||	Reg Var
5		
6		
None ||	Ruf	

108 E

Dup of 48

Make the blank as thin as you can transfer & print it Ask Moore How thin you can make it.

|| Reg Var

400 grms 20 lbs pressure

Powder packs four pin removed + 1/2 inch rubber put on top of mace rubber powder packs close in small press Wt 417

200 to 208 gauge leaves moulds clouded & frosted — no adaption req used 18 all OK

Trans - 12 - 1 Cracked Cards 7 Reg lifts

Centers - 1 mechanical

3 Prints OK

Trouble in blanks

Centers

RO		
1 — 1	fine IIII	
2 1	good IIII	
3		
4 ~~IIII~~	fair IIII	Red Var
5 III		
6 II		
none	Ruf	

109

Use 48 powder

Make 15 blanks - no hammers working - no strike off - Thin ~~plate~~, Blank

Blank - 1/2" rubber placed on top small rubber powder press close in small press 1/8 below normal ring - WT 508 gauge 235 240 leave rounded clouded a frosted no adapter ring used 180K no die - 20 lbs used

Transfer 12 2 left, cracked

Prints 3 poor ~~[illegible]~~ prints ~~[illegible]~~

3 OK

1293 Reg

This is big lot of 1293 blanks run
three Regular
789 Transfd. 216 Cracked 1 Hole
69% ok — 72% for Crax

Prints

543 Prints 388 OK for + only for
defects direct blanks + transfer

59 Run Outs
1 Rough surface
83 Cracks
6 poor prints
6 feed line Cracks —

85% for Cracks
71%
Total - 49%
Trans + Prints

an having unspecified insane way
an equal number of Regular prints

The above look very much
as if it is the Varnish
too much free Phenol

Use Hammers Best —

110 E

Use 48 Powder

Make 15 blanks Lot,
Hammers work three times
longer than usual —
No Stricks off - Thin blank

~~[illegible]~~

~~6 Prints OK~~

500 grm 20 lbs used Hammers worked
1 Mark — crack from 1/2" rubber over [illegible]
powder feed from [illegible] 3/16 below
moved ring Lot 485 gauge 270 274
leaves moved slightly [illegible] + fractured
~~No adapter~~ ring used 180 OK No dies —

~~[illegible]~~

101	Fair	Transfer 12 ~~[illegible]~~
1		
2	good	~~1 Ck~~ 2 Left Ck
3		
4	fair	4 Thin Mangled
5		
6		
7	Rub	Prints 2 poor prints
		1 Ck Center out Crack

RO

1 ||
2 |||
3
4
5 |||
6 ||
7 ||
7

Fine ||||| |

good

fair |||

Ruf ||

||| E - We had 2 : 94s. This is one

Old 48 Blanks req wood
pulp Lamp black no stick off -
40 to 50% Hum 180 - 20 lb small grain
Dripped + Baked

Use Hoffman 1319 Var 4 L 4/4
no added pigment

Var OK looks good - plates even - no
streaks or holes Dont creep -
Oven 374 357 OK 12 batches
1 Ruined 2 ckd 2 injured

Transfer 12 8 OK 4 left to ckd
64

6 Prints 6 OK

RO	
1	fine ✓✓✓
2	good
3	
4	fair
5	
6	Poor
none	

112 E

Duplicate 106 E with thin blanks made in turned down rings, moulded so as to get a scrap off

Dipped

This is 48 E powder reg Lac but ground fine 89% thru 180 mesh 12 % thru afterwards 24 mesh

Make blanks as I want to transfer some special varnishes

750 grs 100 lbs press

11/16 in moulded rings used with Expt. bottom plate placed under bottom plate in moulded to remove moulded clear powder pressed close in small press 1/8 scrape off Wt 453 gauge 210 leaves moulded clouded frosted - 27 ok 9 pull outs.

12 Trans 2 ok 3 thin Many 1 ckd Var
5 left Cracked - big Centers depth 2 or 3"
Hollow Var plates —
Prints 1 poor p 1 Cracked around marg'n

RO		
1	7 in	1111
2	1	good 11
3	11	
4		fair
5	1	
6	11	Ruf
now		

Blanks 550 grm 100 lbs pres
1/8 scrape off cut 456 – Calliper
210 – no discards –

113E

Dup of 112 but use regular ground powder in 48 mix but use low ringp & get scrape off in thin blank

This is to compare Coarse & fine powders —

Make 12 only

550 grm 100 lbs pres | 11/16 mouled ring
used bottom plate placed under bottom plate – mouled to raise mould + clear hammer pack close
1/8 scrape off 453 cut gauge 210
leaves mould frosted & clouded – spots – 12 blank 12 OK

Transfer 12 3 cooked Centers
5 big 2@4" lifts 1 thin marginal
3 finals 3 OK

RO	
1	Fum ~~IIII~~ I
2	good
3	
4	fair
5	
6	
None IIIII	Ruf

2 Extra not dipped

RO	
1	Fum I III
2	good
3	
4	fair
5	
6	
None IIII	Ruf

Both OK in transfer
Print OK

The Extra 2 dont weld at all
Can peel Var off 1/2" area
1 piece -

Note surfaces

114 E

Use - 112 E Blanks, make
12 Transfers using
16 Resin Varnish with,
5 1/2 of 6/4 - no naphthalene in

Print 6 =

Transfd 12 - 6 Cooked Center
6 defts Cracks by lefts Center

All due to
Thin hard blank

RO		Caliper 155/1000 5/32
1	fine ~~IIII~~ I	
2	good ~~IIII~~ I	
3 II		
4 ~~IIII~~	fair	
5 III		
6 II		
none	Rf	

Phenomenon - These blanks & Records should not have any matte - yet they have strong matte Nothwithstanding fine powder & Chalk

There is something causing them that we have never suspected ? ?

115 F

He can only grind - 63% thru 180

Duplicate 1293 ground fine, 89% thru 180 -

Use turned down ring mould have scrape off & thin blank

use Reg Transfers -

Make 12 at first

& then if moulds not busy make 24 more

Blank 11/16 ring wood - 350 grms 100 lbs - 1/2" Extra rubber used powder peaks above on small press wt 236 gauge 1/16 ss dull blank leaves surface dull 36 OK 2 pull outs - He dont say that there is a scrape off -

Trans 12 - 11 ok 1 mech defect

Prints 6 prints ok except poor prints on margin -

If a record was on I would
pass it as OK.
Outer part steam is sharp fair
1" in Steel surface good
way is fine except some
fry. This process —
Very promising
if it were worth on
1293 fine grained —
No RO —

Moore took this 48E blank
Varnished it over with a
brush light, dried it 2 hours
on rack — Then ~~flooded~~
it Reg 45 cc Then dried
2 hours on Rack
Then turn. run it thru
the Reg Oven schedule
with Reg plates —
one one side only

Note

63% thru 180 Mesh is as fine as we can grind

1293 powder 5 wood 2 chalk 2 Lac —

We may have to get better grinder but hope not,

116E

Make a batch of Varnish
Using 16 Resin, no free phenol $5\frac{1}{2}$ 6/4
no Naphthalene —
+ flow 400 plates
+ Transfer + Print regular blanks
Transfers to get unspected
also Prints —
Use Regular Blanks —
Tell Moore about this,

RO

1—1	fine IIII I II
2	good IIII
3 III	
4 I	fair
5 IIII	
6 III	
none	Ruff

barely good well

Not satisfactory as to surface

~~Edges fair~~ to good

117-

Use 1293 powder ground 60 to 63 % Item 180

Mould in regular moulds regular way if it will not make too thick a blank

~~We~~ make 100 blanks

Transfer 12
print 6-

Using 118 Special Varnish plates

450 grm
75 lbs - 1/8 scrape X wt 405 - gauge 237

Irregular moulds fair 107 all OK

Reg Moulds 1293 ground fine

Transfd 12 all OK

8 chisel to plate (1 side) - uneven Edge

2 both sides 2 release and freely

118-E

Make 300. Varnish plates Extra over what you make for 116E —

Want to use these plates to Experiment with on blanks of different Kinds —

RO

1 Fair

2 good Even but not soft

3 ||

4 || fair — Even but sharp — no cracks

5 ||||

6 ||

none || Ref Low Welds good — Blank standard Thickness

Edges fair to good

119

Duplicate 117 but use Regular Varnish plates to make transfers Dipped

Transfer 12
Print 6

Transfd 12 12 OK

Print 6 — 5 OK 1 poor print

RO Fine ~~||||~~ ||||||||| Too thin for

1
2 good
3
4 fair
5
6 ~~||||~~ | Ruff
none ~~||||~~ |

Dont weed good
Can run knife in
to chip off 1/4 deal

Black Report
1" ring 450 grain 75 lbs 1/8 scrape off
Wt 392 Collapse 220
dull black leaves moulds fine
24 24 ok 100%
1293 - all thru 180 leaves moulds
fine no cloudy or frosted —

120.E Jake 1293 powder fine
ground 63% thru 180 —
Screen enough thru 180
to make ~~24~~ blanks in
~~Regular Moulds~~ inch ring
Moulds - ~~also make~~

~~[illegible]~~

Use 12 of the blanks
with Regular Varnish

Transfer 12 11 ok 1 mechanical
6 Print 6 ok —

Blanks stuck to platen (1 side) around Edge 3
Both sides 1 broke out Center 1
" released freely 8

Used 1 inch ring —

RD Fine 9 fine
1
2 good
3
4 fair
5 III
6 IIII
None IIII - Ruff -

Edges good - need not be reedged
only 1 dished & that not more than
6/1000 —

121 E

Use the extra blanks
of 120 E & transfer with
118 E plates which
we have made several
hundred - These
plates are 5½ 6/4
16% Phenol Resin -

Transfers 12 12 OK
Prints 6 6 OK Evens plates over

2 Sheets plates (1 side arranged Edges)
1 " " Both sides
9 free release

Re inspection of records
others OK -

Signed on both
+ Corrected parallelism Edge
and blank Finish

RO	~~IIII~~	fine II
1	II	
2	III	good I
3	I	
4		fair ~~IIII~~
5		
6	I	
none		Ruff IIII

[redacted] 122 E

Make in inch ring moulds
24 blanks - of 1293
powder Coarse part
that didnt go thru
180 mesh —

Transfer 12 cutti
Reg Varnish plates

RΔ	fine
1	
21	good
31	
4	fair
5	
6	Rough
None	

[redacted] 123 E

Dup of 122
Use the other 124
Transfer with 118 E
Varnish plates of which
we have several
hundred — This
Varnish is 5½ % 6/4

Trans 120 OK
~~Stick~~ To plate (1 side) around
Edge - 1 both sides
6/ ~~Rejected~~ Fine Clumps
Clean Ray

RO1	fine ~~THT~~ IIII
1	
2 1	good
3 1	
4 ~~IIII~~	fair 1
5 11	
6 1	
none 1	Ruff 11

124E

Moore

1293 Blanks dipped in dipping Varnish which has added to it a bulk of alcohol Equal to its own bulk. & well mixed

~~dip 10 Secon~~ dip ~~5 Sec~~ right out out.

Transfer 12 Reg Varnish

Transfd 12 11 OK 1 chd.
2 stuck to plate 1 side around Edge
10 released freely

Prints 6 6 OK

125 E

Make some dipping Varnish about 5 gallons, split it in 5 Lots of one gallon each

In each gallon put in No 1 3 6/4 #2 put in 4 6/4 in #3 5 6/4 — in No 4 6 6/4 — & in number 5 7 6/4 —

I will make a tin can to hold enough to dip single records = put the 5 Lots of Varnish in Ice Chest

2nd test.

RO	
1	fine
2	good
3	fair
4	
5	
6	
none	Ruf

RO	
1	fine
2	
3	good
4	
5	fair
6	R

1 Broke 4 ft 8th Drop
1 " " 1st "

126E is 89% fine This Explains why 127 is bad
Note 126 as compared to 127 — Certainly 127 has been hurt in transferring or perhaps Schedule as 1/2 Wood should not have made the big differ— in RO
Will run three 12 more

127 | Blank 11/16 ring 1/8 scrape off — wt 330 — 3/16 Calipers 12 120K leaves moved, closed & fractured

126E

Needle shows no cracks from hole —

Make enough powder for 150 blanks of —
5 Chalk 2 1/2 wood 2 Lac
grind at 89% Three 180 —
Make 12 with turned down mould rings like used on 112E — Thin plate,
Use 5 1/2 6/4 Varnish plates E 116 — We have a lot of them now — Dip regular
Print 6 — These are for surface test & drop on the floor test to see if the Extra wood will bring them.
Test 4 ft drop —
Transfer 12 9 ok 1 cracked
2 big lefts — Center —
Prints 5 ok 1 poor print —
5 finish 1 side —
7 free release

We clean them.

RO		
1	fine	~~IIII~~ IIII
2	good	II
3		II
4	fair	I
5		II
6	Ruf	~~IIII~~
None		

RO	Broke	3 fine
1		
2	good	
3		
4	fair	
5		
6		
None	Ruf	

Dropped on hard ~~floor~~ held flat 4 ft high -

I	Broke on	2nd Drop	
I	"	4 th	"
I	"	1 st	"
I			

Even Chalk is too weak for Commercial + in addition dont give good surfaces like 120 121 E

127 E 65% fine

Dup of 126 E

But use 5 Chalk 3 wood 2 hac

50 Hanks dip

Use 116 E Varnish plates

2nd Lot	
RO	fine ~~IIII~~ II
1	
2	good I
3	
4	fair
5	
6	Ruf
None	

Transfer 12 12 OK Even plates from oven - 1 blank stick 1 side at Edge
11 released freely
Transferred good - blanks broke out at Edge

Will run them 12 more 127 - to see if they will improve + be as good as 126

11/16 ring - 500 gms 100 lbs pressure
1/8 scrape off. Lot 347 gauge 3/16
pink - 12 - 12 OK leave moulds
Closed + proceed.

RO	Fine ~~IIII~~ ~~IIII~~
1	
2	good II
3	
4	fair
5 III	
6 ~~IIII~~ II	
none II	Ruf -

Can undercut with knife to left out 1/8 piece —

128 E

Moore Varnish 12 plates E 116 — with Dipping Varnish dry and transfer them on 6 - 1293 fine ground powder blanks made in ~~[illegible]~~ 11/16 ring — Do not dip blanks as I think Varnish on plates will do the Trick use 132 E Blanks

Transfd 12 10 OK 2 Cooked Var
Blanks stuck to plates 1 side around Edge 5
Released freely 7
Var transfd good 7
Prints 6 6 OK

RO
1 fine
2 good
3
4
5 fair
6
none Ref

Probably 5 wood 2 charcoal well do - 4 stand drop

fine weld Cant under run

4ft drop - 1 1st drop
1 2nd "

To Brittle to Gr Commercial

Transfer 12 - 11 OK 1 mechanical
1 stuck to plate 1 side 11 free release
good transfer -
6 Prints 6 OK

Re inspection of prints - 1 squeeze out at Edge Crack
1 cracked from Center hole made in knocking out pin

129 E

5 & blank

Grind some charcoal so all passes 180 mesh - mix with wood fibre that all has passed 150 or 180 mesh.
Use 3 wood 4 charcoal & grind as fine as you can
Use Reg mould so as to get some strike off -
Transfer 12 using 116 E
Varnish plates
Print 6 -
Dip the blanks Reg dip Varnish

11/16 mould ring 450 grm 100 lbs pressure
1/8 scraped off left 335 - gauge 210-220
leaves mould cloudy 84 840K
Blank Very cloudy - pack form in small press

RO 7 mo ~~IIII~~ ~~IIII~~ II

1
2 good
3
4 fair
5
6 II
none ~~IIII~~ ~~IIII~~ Ruf

Broke 1st 4 ft drop

Weld can be under run a little to Chip out 1/8" Not so good as 129 - Thin dip Var is not good

Transfer 12 10 OK 2 Cracked Var
Prints 6 3 OK 3 Margin Cracks -
these are squeeze out cracks probably due to excess alcohol in Dip -

130 E

Dup of 129 but blanks dipped in Dip Varnish which has been thinned down by using equal bulk of alcohol, dip in + out quick —

Transfer 12 using 116 E Varnish plates

Print 6

RO
1 — 1
2
3
4
5 L
6 II
n

fm I
good III

131 E

OK

Moore

Paint face of
6 116E Varnish plates
with Soda + dry — I will
give you the Soda —

Transfer These plates on
1293 not fine
~~[illegible]~~ ~~[illegible]~~ ground blanks Reg 7
Print Chem — test for weld
& surfaces —

Soda 20 minutes
by mistake instead
of 20 seconds —

132

OK

Make up 100 blanks

1293 finest ground 63%

~~with 11/16 mould~~ use reg mould

Blank

11/16 ring 1/8 scrape off wt 220 ??

ground 1/16th.

95.3% OK

Leave moulds clear

108 — 103 OK 2 pull outs
3 mechanical defects

325g 100 lbs pressure

All 4 Record Fine surface
no Run Out, few fine chaps
~~not valuable~~ - could pass
the 4 as A1 Records
Weld's fine Edges OK —

This should be worked
up -

Baked in Oven 9 hours
1st 5 hours from 90 deg raised
10 degrees each hour to
230 deg

133E

Takes a 1293 blank -
117E
Take dozen ~~48E blanks thin 11/16 Ring~~

Varnish with a brush One
face of the blank using
Dip Varnish thinned down by
adding an Equal ~~[illegible]~~ bulk
of alcohol — Dried 2 hours on
Dry — rack — 45cc flowed 116E
Dried 2 hours —
The flow over 1/2 dog blanks
45cc of 116E Varnish.
Dry well before putting in
oven Then run oven up
very slowly to stop
bubbles but full lamp
should be as high as Reg

Printed 4

Resin is not soluble in Ammonia

Resin dissolved in NaOH + precipd by HCl is pink if heated, the Resin precipitates white some Rosanin in it.

134 E

Hoffman

Make 5 gals 116E Var, that has $5\frac{1}{2}$ 6/4 no phenol added 16 Resin

And put it in the Lee Chest for use, test viscosity + then 24 hours test Viscosity again -

~~1385~~

Make up gallon Varnish
instead of using 6/4 use
5 of the Chloride of 6/4 —
Transfer on Req blanks
Nemo OEC has it —

136E

Dup 135

But see 6 of Florida

of 6/4

137E

Dup 135E

Using 7 Chemistry 6/4

1385

Dup 135

Using 9 of Chlorideaf 6/4

139 E

Dup 135 E

Using 12 Cleaned of 6/4

Fred Otto Experiments — Surface Blank
50 Chalk 2 Cowhair glue

Been trying glue mixing it
with Chalk Cowhair etc
Cant work it — impracticable